



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

[Docket No. FAA-2014-0510]

Implementation of Legislative Categorical Exclusion for Environmental Review of Performance Based Navigation Procedures

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice and request for public comment.

SUMMARY: The Federal Aviation Administration (FAA) is considering how to implement Section 213(c)(2) of the FAA Modernization and Reform Act of 2012 which directs the FAA to issue and file a categorical exclusion for any navigation performance or other performance based navigation (PBN) procedure that would result in measureable reductions in fuel consumption, carbon dioxide emissions, and noise on a per flight basis as compared to aircraft operations that follow existing instrument flight rule procedures in the same airspace. In September 2012, the FAA tasked the NextGen Advisory Committee (NAC) for assistance, especially on how measurable reductions in noise on a per flight basis might be measured and assessed. The NAC developed a Net Noise Reduction Method which it recommended to the FAA. This notice provides the public an opportunity to comment on the Net Noise Reduction Method and possible variations of it to further inform the FAA's consideration of interpretive guidance to implement Section 213(c)(2).

DATES: Send comments on or before [INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: Send comments identified by “Docket Number FAA-2014-0510” using any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov> and follow the online instructions for sending your comments electronically.
- Mail: Send comments to Docket Operations, M-30; U.S. Department of Transportation (DOT), 1200 New Jersey Avenue, SE., Room W12-140, West Building Ground Floor, Washington, DC 20590-0001.
- Hand Delivery or Courier: Take comments to Docket Operations in Room W12-140 of the West Building Ground Floor at 1200 New Jersey Avenue, SE., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.
- Fax: Fax comments to Docket Operations at 202-493-2251.

Privacy: The FAA will post all comments it receives, without change, to <http://www.regulations.gov>, including any personal information the commenter provides. Using the search function of the docket web site, anyone can find and read the electronic form of all comments received into any FAA docket, including the name of the individual sending the comment (or signing the comment for an association, business, labor union, etc.). DOT's complete Privacy Act Statement can be found in the Federal Register published on April 11, 2000 (65 FR 19477-19478), as well as at <http://DocketsInfo.dot.gov>.

Docket: Background documents or comments received may be read at <http://www.regulations.gov> at any time. Follow the online instructions for accessing the docket or go to the Docket Operations in Room W12-140 of the West Building Ground Floor at 1200

New Jersey Avenue, SE., Washington, DC, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

FOR FURTHER INFORMATION CONTACT: Lynne S. Pickard, Senior Advisor for Environmental Policy, Office of Environment and Energy (AEE-6), Federal Aviation Administration, 800 Independence Avenue SW., Washington, DC 20591; telephone (202) 267-3577; e-mail lynne.pickard@faa.gov

SUPPLEMENTARY INFORMATION:

Background

The National Environmental Policy Act (NEPA) establishes a broad national policy to protect the quality of the human environment and to ensure that environmental considerations are given careful attention and appropriate weight in decisions of the Federal Government. Regulations promulgated by the Council on Environmental Quality (CEQ) (40 CFR parts 1500–1508) to implement NEPA establish three levels of environmental review for federal actions. An environmental impact statement (EIS) is the detailed written statement as required by section 102(2)(C) of NEPA, and is prepared for those actions when one or more environmental impacts are potentially significant and mitigation measures cannot reduce the impact(s) below significant levels. 40 CFR §1508.11. An environmental assessment (EA) is a more concise document that provides a basis for determining whether to prepare an environmental impact statement or a finding of no significant impact. 40 CFR §1508.9. A categorical exclusion (CATEX) is used for actions which do not individually or cumulatively have a significant effect on the human environment. 40 CFR §1508.4. A CATEX is not an exemption or waiver of NEPA review; it is a level of NEPA review.

CEQ regulations require agency procedures to identify classes of actions which normally require an EIS or an EA, as well as those actions which normally do not require either an EIS or an EA (i.e., a CATEX). 40 CFR §1507.3(b). In addition to identifying actions that normally are CATEXed, an agency's procedures must also provide for extraordinary circumstances in which a normally excluded action may have a significant environmental effect which would preclude the use of a CATEX. 40 CFR §1508.4.

The FAA has adopted policy and procedures for compliance with NEPA and CEQ's implementing regulations in Order 1050.1E, Environmental Impacts: Policies and Procedures, dated June 8, 2004 (as updated by Change 1, dated March 20, 2006). Order 1050.1E lists FAA actions subject to a CATEX in accordance with CEQ regulations, including CATEXes for FAA actions involving establishment, modification, or application of airspace and air traffic procedures. In addition, in the FAA Modernization and Reform Act of 2012 (Pub. Law 112-95), Congress created two legislative CATEXes for certain air traffic procedures being implemented as part of the Next Generation Air Transportation System (NextGen).¹ Section 213(c) of this Act provides:

(c) COORDINATED AND EXPEDITED REVIEW.

(1) IN GENERAL. – Navigation performance and area navigation procedures developed, certified, published, or implemented under this section shall be presumed to be covered by a categorical exclusion (as defined in section 1508.4 of title 40, Code of Federal Regulations) under chapter 3 of FAA Order 1050.1E unless the Administrator determines that extraordinary circumstances exist with respect to the procedure.

¹ The Next Generation Air Transportation System, referred to as NextGen, is a term used to describe the ongoing transformation of the National Airspace System (NAS). At its most basic level, NextGen represents an evolution from a ground-based system of air traffic control to a satellite-based system of air traffic management.

(2) NEXTGEN PROCEDURES. – Any navigation performance or other performance based navigation procedure developed, certified, published, or implemented that, in the determination of the Administrator, would result in measurable reductions in fuel consumption, carbon dioxide emissions, and noise, on a per flight basis, as compared to aircraft operations that follow existing instrument flight rules procedures in the same airspace, shall be presumed to have no significant affect [sic] on the quality of the human environment and the Administrator shall issue and file a categorical exclusion for the new procedure.

These two new legislative CATEXes have been included in the FAA's proposed Order 1050.1F, Environmental Impact: Policies and Procedures, 78 **Federal Register** 49596 (Aug. 14, 2013). The FAA issued implementing guidance on the CATEX described in Section 213(c)(1) on December 6, 2012. Technical and legal issues have hindered implementing guidance on the CATEX in Section 213(c)(2) because none of the FAA's current noise methodologies or methodologies that the FAA has explored measure noise on a per flight basis.

The CATEX in Section 213(c)(2) has some unique characteristics. It presumes no significant effect on the quality of the human environment based on a review of three factors—fuel consumption, carbon dioxide emissions, and noise. To apply this CATEX, the FAA is directed to determine that all three factors would be measurably reduced when compared to what is generated by existing instrument flight rules procedures, instead of determining that there would be no potential for significant impacts. It bases the determination of measurable reductions on a per flight basis. It does not provide for extraordinary circumstances to override the CATEX.

Section 213(c)(2) states that this CATEX applies to “any navigation performance or other performance based navigation procedure....” The FAA interprets this to mean NextGen performance based navigation (PBN) procedures based on the terminology and because the provision is entitled “NextGen Procedures” and is within a more comprehensive Section 213 that is entitled “Acceleration of NextGen Technologies”. PBN procedures are flight procedures that rely on satellite-based navigation, i.e. Area Navigation (RNAV) and Required Navigation Performance (RNP). Accordingly, the FAA finds that the use of this CATEX is limited to PBN procedures. The CATEX cannot be used for conventional procedures (flight procedures that rely on ground-based navigational aids) or for projects involving a mix of conventional and PBN procedures, which is commonly the case for sizeable projects such as an Optimization of the Airspace and Procedures in the Metroplex (Metroplex). In addition, for projects involving only PBN procedures, 95 percent or more already meet the conditions of existing FAA CATEXes. Under these circumstances, the Section 213(c)(2) CATEX would be expected to be used infrequently. It could expedite review of a PBN-only project that would otherwise be subject to an EA or possibly an EIS due to a high level of environmental controversy or potential environmental impacts that would preclude the use of another existing CATEX.

The statutory language of Section 213(c)(2) states that the CATEX cannot be implemented unless the FAA can determine that there are measurable reductions of fuel consumption, carbon dioxide emissions, and noise on a per flight basis. While measurable reductions in fuel consumption and carbon dioxide emissions can be determined on a per flight basis using current methodologies, aircraft noise poses unique challenges for such a determination. Noise depends not only on the varying noise levels of an aircraft as it flies, but

also on the position of the aircraft in relation to noise sensitive receivers on the ground. Noise tends to increase at some locations and decrease at other locations as PBN procedures shift and concentrate flight tracks. Total noise in an area of airspace cannot be calculated by adding up the noise levels at various locations on the ground, and noise levels cannot be divided by the number of aircraft to produce noise per flight. The FAA could not find a technically sound way to make the noise determination required by the statute based on an analysis of noise methodologies.

In September 2012, the FAA tasked the NextGen Advisory Committee (NAC) for assistance in further exploring how to make use of this legislative CATEX. The NAC, established September 23, 2010, is a 28-member Federal advisory committee formed to provide advice on policy-level issues facing the aviation community in developing and implementing NextGen. In response to FAA's request, the NAC created a Task Group of diverse stakeholders representing airlines, airports, manufacturers, aviation associations, consultants, and community interests. The Task Group agreed with the FAA's technical analysis of current methodologies and went on to develop a Net Noise Reduction Method. The Net Noise Reduction Method received unanimous support from Task Group members and was recommended to FAA by the NAC on June 4, 2013.²

Following extensive evaluation of the NAC's recommended Net Noise Reduction Method, the FAA has decided to solicit public comment to further inform the FAA's consideration of interpretive guidance to implement Section 213(c)(2) using the Net Noise Reduction Method and possible variations on it. There are reasons for seeking public review in

² <http://www.rtca.org/Files/Miscellaneous%20Files/CatEx2%20Report%20NAC%20June%202013final.pdf>

addition to the NAC's public forum. One reason is that this CATEX has some unique statutory requirements that have presented challenges to the FAA in determining how to implement the CATEX. In addition, the Net Noise Reduction Method would introduce a new method for assessing noise for certain proposed PBN procedures under NEPA that is different in a number of respects from current noise analysis methodologies. The NAC has also suggested an additional test, at the FAA's discretion, involving a determination of significant noise impact which is further explained below; and the FAA would like input from the public on the use of such a test. Finally, there appears to be substantial public interest and concern regarding this CATEX, as reflected in numerous comments submitted on the inclusion of this CATEX in the FAA's proposed Order 1050.1F.

Description of Net Noise Reduction Method

The Net Noise Reduction Method provides for the computation of the number of people who would experience a reduction in noise and the number of people who would experience an increase in noise with a proposed PBN procedure as compared with the existing instrument procedure, at noise levels of DNL 45 dB and higher.³ If the overall number of people is reduced, the NAC Task Group viewed this result as reasonably demonstrating noise reduction as intended by the Section 213(c)(2) legislative CATEX; therefore, the noise reduction determination required for the CATEX could be made. The example in Table 1 below illustrates the result (i.e., a decrease in noise for 1,431,221 people compared to an increase for 1,018,055 people) that could support the CATEX noise determination using the Net Noise Reduction Method.

³ DNL, the Day-Night Average Sound Level, is the FAA's primary metric for assessing aircraft noise. DNL accounts for the noise levels of individual aircraft events, the number of times those events occur, and the period of day/night in which they occur.

**Table 1. Number of People Exposed to DNL Level
PBN Procedures vs Existing Procedures ⁴**

DNL Noise Exposure Band	Number of people decreases	Number of people increases	Number of people unchanged
45-60	1,405,952	961,579	445,074
60-65	15,531	45,401	6,792
Above 65	9,738	11,075	3,964
Total People	1,431,221	1,018,055	455,830

The NAC Task Group additionally observed that if there would be a net increase in people exposed to noise within the DNL 65 dB noise exposure band and the amount of the noise increase would be described as significant under FAA's NEPA criteria⁵, community opposition could delay implementation and negate Congressional intent of expedited PBN procedures. Accordingly, the NAC Task Group indicated that in such a case, the FAA might apply its significant noise impact threshold as a second test in addition to the determination of net reduction in the number of people exposed to noise. If the noise increase would not exceed DNL

⁴ The example in Table 1 is used by the NAC based on noise and population data from an EA for procedural changes at Chicago Midway International Airport; however, in its June 2013 published report, the NAC mixed this example with another example in reporting the number of people in the DNL 60-65 noise exposure band, which also resulted in inaccuracies in the total number of people. The FAA used NAC source data for the example in this notice. The Midway EA may be viewed at <http://www.flychicago.com/midway/en/AboutUs/NoiseManagement/AirportNoise/Airport-Noise.aspx#FinalAssess>. The NAC also used an example based on the Greener Skies EA for Seattle Tacoma International Airport, which is not repeated in this notice.

⁵ The FAA's threshold for a significant noise impact under NEPA is an increase of DNL 1.5 dB or more for a noise sensitive area that is exposed to noise at or above the DNL 65 dB noise exposure level, or that will be exposed at or above this level due to a 1.5 dB or greater increase, when compared to the no action alternative for the same timeframe.

1.5 dB in the DNL 65 dB band and there would be an overall net reduction in the number of people exposed to noise across all noise exposure bands, the NAC Task Group concluded that this would appear to further confirm that application of the CATEX is reasonable. If the increase in noise in the DNL 65 dB band was DNL 1.5 or greater, the FAA could decide not to use the CATEX.

FAA Considerations Involving the Use of the Proposed Net Noise Reduction Method

The FAA's first consideration is the extent to which the Net Noise Reduction Method meets the statutory requirement for the FAA to determine that proposed PBN procedures would result in measurable reductions in noise on a per flight basis compared to aircraft operations following existing instrument flight rules procedures. As with current noise analysis methodologies, the Net Noise Reduction Method does not produce a quantity of noise on a per flights basis. However, the NAC Task Group has pointed out that the Conference Report describing the final legislative language for the Section 213(c)(2) CATEX expresses the Congressional intent to determine measurable reductions on an *average* per flight basis. The Task Group confirmed with Congressional staff that this language allows for averaging noise impact on a representative basis for flights using a particular procedure. The FAA is considering the extent to which the Net Noise Reduction Method should be relied on to determine measurable reductions in noise on a per flight basis under the statute and in light of the accompanying Conference Report, and invites public views on this aspect of the methodology.

Another consideration is the extent to which the Net Noise Reduction Method's reliance on a net reduction in the number of people exposed to noise constitutes a net reduction in noise,

since the two reductions are not the same. An increase in the number of people exposed to noise does not convey the amount of the noise increase, i.e. whether it is a small or a large increase in noise. Similarly, a decrease in the number of people does not convey the amount of the noise decrease. If people receiving a noise decrease outnumber the people receiving an increase, but the amount of the noise decrease is small compared to the noise increase, is it appropriate for the FAA to determine that there is a measurable reduction in noise?

The FAA has explored this issue by using the same source data used by the NAC in its example (see Table 1), but calculating differences in terms of noise, i.e., the average change in the DNL at thousands of locations within the area of airspace. The FAA did this calculation in two ways—(1) a straightforward average of all locations, and (2) a population weighted average. The population-weighted average was used because where people reside in relation to locations on the ground that receive more or less noise is relevant to assessing noise impact. The FAA's results, expressed in changes in noise using DNL, are shown below in Table 2. In both cases, the total average change in noise is a decrease. Therefore, if the FAA used a Net Noise Reduction Method, but relied on noise changes rather than population changes, the results in this example could support the use of the legislative CATEx. The FAA is giving further consideration to which approach (i.e., population change, noise change, population weighted noise change) best fulfills the letter and intent of the statute. The FAA is also considering whether one approach offers greater public understanding, and invites comments on these different approaches to a net noise reduction methodology.

**Table 2. Average Changes in DNL Level
PBN Procedures vs Existing Procedures**

DNL Noise Exposure Band	Straight Average Change in DNL	Population Weighted Average Change in DNL
45-60	-0.3 DNL	-0.2 DNL
60-65	0	0
Above 65	0	+0.1
Total Change	-0.3 DNL	-0.2 DNL

In the examples in both Tables 1 and 2, the greatest reductions in either noise or the population exposed to noise are at the DNL 45-60 dB level, which is the lowest noise level that the FAA normally evaluates for differences in noise that may result from certain proposed changes in procedures. In Table 1, there are increases in the number of people in higher noise exposure bands of DNL 60-65 dB and above DNL 65 dB. In Table 2, the average DNL decrease occurs in the lowest noise exposure band, while the average DNL change in the higher noise exposure bands is either zero or a slight increase using the population weighted average approach.

The use of the total of all three DNL noise exposure bands to determine a net noise reduction gives equal weight to lower and higher levels of noise, while the FAA's practice is to give greater weight to higher noise levels which people find more annoying, especially noise levels above DNL 65 dB. Accordingly, the FAA is considering the extent to which a mix of noise increases and decreases in different noise exposure bands supports a determination of noise reduction, especially when reductions at lower DNL noise levels would outweigh increases at

higher noise levels. A potential alternative approach could be to require reductions in all three DNL noise exposure bands to support a noise reduction determination for use of the CATEX. This alternative approach would be expected to reduce the use of the CATEX, and it appears less consistent with the statutory provision to compare procedures “in the same airspace.” The FAA invites comments on this aspect of the Net Noise Reduction Method.

Finally, if the FAA decides to use the Net Noise Reduction Method or a variation of it, the FAA must also decide if and how to employ its significant noise impact threshold. The decision that is the most consistent with the statutory language would be not to employ the threshold at all. The statutory text is prescriptive in that a PBN procedure that meets the test for measurable reductions “shall be presumed to have no significant affect [sic] on the quality of the human environment and the Administrator shall issue and file a categorical exclusion for the new procedure.” Unlike CATEXes that are administratively established under CEQ regulations, this legislative CATEX is not subject to extraordinary circumstances; therefore, a CATEX determination is not precluded by potential environmental impacts that are beyond the specific parameters in the statutory text (i.e, measureable reductions in fuel consumption, carbon dioxide emissions, and noise on a per flight basis). As the FAA considers the viability of employing the significant noise impact threshold in conjunction with this CATEX, the FAA is soliciting public views on whether a threshold test may and should be used. Further, if a significant noise impact threshold test is used, should it be used only when there is a net increase in people exposed at DNL 65 dB and above, as the NAC Task Group has suggested, or should it be more broadly used to check for significant noise impact when there is any increase in the number of people exposed to noise at DNL 65 dB and above—even if there is a net population benefit at that level?

Solicitation of Public Comment

The FAA invites public comment on the entirety of the prospective implementation of the CATEX in Section 213(c)(2) of the FAA Modernization and Reform Act of 2012, and particularly invites comment on the following specific aspects of the Net Noise Reduction Method which are under consideration by the FAA as described in this notice:

1. Extent to which the FAA should rely on the Net Noise Reduction Method to determine measurable reductions in noise on a per flight basis.
2. Appropriateness of determining that there is a measurable reduction in noise if people receiving a noise decrease outnumber the people receiving an increase, but the noise decrease is small compared to the noise increase.
3. Different approaches to a net noise reduction methodology (i.e., population change, noise change, population weighted noise change), and whether the selection of one approach over another is preferred and increases public understanding.
4. Extent to which a mix of noise increases and decreases could support a determination of measurable noise reduction, especially when reductions at lower noise levels outweigh increases at higher noise levels, and whether an alternative approach that would require reductions in all three noise exposure bands to support the use of the CATEX should be used.
5. Whether a significant noise impact threshold test should be used; and if so, if it should be used only when there is a net increase in people exposed to noise at DNL 65 dB and

above, or if it should be used when there is any increase in the number of people exposed to noise at DNL 65 dB and above—even if there is a net population benefit at that level.

Issued in Washington, DC on August 13, 2014.

Lourdes Q. Maurice,
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